REMARKS

The Office Action dated 3 August 2005 has been reviewed and the comments of the U.S. Patent Office have been considered. Claims 1, 5, 31, 34 and 38 are amended above. Applicant respectfully requests reconsideration of this application.

Applicant has amended claims 1, 5, 31, 34, and 38 to correct informalities relating to consistent use of "sensing resistor" and proper antecedent basis of "an ASIC circuit".

Claims 1, 4, 10, 30, 34, and 37 were rejected under 35 U.S.C. § 102(b) as being clearly anticipated by U.S. Patent No. 5,744,939 ('939) to Leppo.

Applicant respectfully submits that claim 1, 4, 10, 30, 34, and 37 are not anticipated by Leppo nor obvious in view of Leppo at the time the invention was made.

Leppo deals with a monitoring circuit for a battery pack charging apparatus which modifies charging time of the battery pack as a function of temperature of the battery pack being charged. In other words, Leppo's monitoring circuit modifies charging time to compensate for changing temperature effects on the charging rate of a battery pack. In Leppo, the temperature compensating circuit generates a set voltage proportional to the temperature of the battery. The measured temperature is then used to evaluate the state of the battery pack and then determine whether to start or stop the charging circuit based on the temperature reaching a particular point. Leppo does not disclose a temperature compensation circuit that generates a voltage value proportional to the input current where the voltage value is then attenuated by potential changes in the ambient temperature. Instead, in Leppo the voltage generated varies directly with the temperature of the battery pack. There is no correction for ambient temperature effects to improve accuracy or measurement readings. Similarly, Leppo's circuit arrangement is a voltage

divider configuration whereas Applicant uses an op-amp in an inverting configuration where the gain is attenuated by the changes on the thermistor. Lastly, Leppo is capable of only measuring low DC current whereas applicant's design measures either AC or DC currents withstanding nominal RMS currents.

For at least any of the above reasons, it is respectfully submitted that Leppo fails to teach Applicants' independent claims 1, 10, 30, and 34, and that the rejections under 35 U.S.C. § 102(b) or 103 (a) should be withdrawn. Moreover, claims 4 and 37 depend, either directly or indirectly, from claim 1 and 34, and therefore recite the same allowable combinations of features, as well as reciting additional features that further distinguish over Leppo.

Claims 2, 5, 11, 35, and 38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Leppo in view of Chu et al. **(20040070495)**

Applicant respectfully submits that claims 2, 5, 11, 35, and 38 are not unpatentable over Leppo in view of Chu et al. **(20040070495)** . It would not have been obvious to implement some or all the circuitry into an ASIC used by Chu et al. (Chu).

Chu describes a programmable device capable of taking temperature readings from a temperature sensor in order to establish proper compensation. Chu's work is done digitally where it is flexible to accommodate any linear fitting. In other words, Chu's device takes analog input from a temperature sensor and then converts it to digital form and uses the digital values to set trim values of components for compensating the sensor output. Chu's design is extremely elaborate and requires the use of a microcontroller to manage effectively the temperature compensation. In comparison, Applicant uses thermistors in the gain and/or attenuation scheme directly, and bypasses any analog-to-digital

conversion processes required for compensation. Similarly, Applicant's compensation scheme is directly mapped to the sensing resistor variation with temperature. No trimming is required or performed. Lastly Applicant's design is analog. Without the need for a microcontroller, Applicant's design is simple, uses considerably less parts, and is less expensive than Chu. Applicant's calibration and pre-determined compensation is embedded in the thermistor values and the component values used with the operational amplifier to perform such compensation.

Lastly, Chu clearly states in the background of invention section that the current analog approach using PTCs or NTCs is not adequate and is time consuming. Chu is offering an inherently different approach than applicant by using features such as analog-to-digital conversion and non-volatile memory look-up table. Similarly, Chu also states that digital sensor signal conditioner circuits take advantage of computer controlled instruments and digital communication with computers by using a procedure to set certain parameters, such as the trim values in order to provide temperature compensation, linearization, and amplification for the sensor. Therefore, it is clear that Applicant's circuit design would not in any way enhance the arrangement of Leppo in view of Chu. Without providing any benefit, a proposed modification lacks the necessary legal motivation to establish a *prima facie* case of obviousness under 35 U.S.C. §103. Therefore, the rejection should be withdrawn.

Claims 3, 6-9, 12-15 31-33, 36 and 39-42 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Leppo in view of Pinckaers (3,817,453).

Applicant respectfully submits that Claims 3, 6-9, 12-15 31-33, 36 and 39-42 are not unpatentable over Leppo in view of Pinckaers (Pinckaers).

Pinckaers is directed to solving the problem of disposing or removal of heat generated

within a switch that carries currents where such heat may adversely affect the operation of a thermostat. Unlike Applicant, Leppo and Pinckaers do not focus on sensing and translating a current signal into a temperature compensation voltage signal for accurate reading of electrical data regardless of varying ambient temperatures. There is no correction for ambient temperature effects to improve accuracy or measurement readings in either Leppo or Pinckaers. Pinckaers discloses a thermostat where a second temperature responsive thermistor (thermistor) is mounted in the bridge that controls the thermostat which is in a heat exchange relationship with the output switch. The heat transfer from the output switch changes the resistance of the thermistor which then compensates for the heat generated and transferred to another sensing thermistor located in another area. It would not have been obvious to use the op-amp, NTC, or PTC devices as Examiner states for Leppo in view of Pinckaers because Leppo does not teach temperature compensation based on ambient temperature variation but direct temperature measurement of its battery pack. There would be no technical necessity or technical solution for Leppo to incorporate an op-amp, NTC, or PTC device. In fact, the Leppo design would incur addition parts and cost with such additions with no benefit. Therefore, it is clear that Applicant's circuit design would not in any way enhance the arrangement of Leppo in view of Pinckaers. Without providing any benefit, a proposed modification lacks the necessary legal motivation to establish a *prima facie* case of obviousness under 35 U.S.C. §103.

For at least any of the above reasons, it is respectfully submitted that Leppo in view of Pinckaers fails to teach Applicants' dependent claims 3, 6-9, 12-15 31-33, 36 and 39-42, and that the rejections under 35 U.S.C. § 103(a) should be withdrawn.

Claims 16, 18-23 and 25-29 were rejected under 35 U.S.C. § 103(a) as being unpatentable

over Leppo in view of Pinckaers as applied to the claims above and in further view of Dunk et al. (5,475,371).

Applicant respectfully submits that Claims 16, 18-23 and 25-29 are not unpatentable over Leppo in view of Pinckaers as applied to the claims above and in further view of Dunk et al (Dunk).

Dunk relates to remotely placed fault sensors and indicators for electrical distribution systems where electrical faults of a predetermined magnitude are detected. Dunk also uses a temperature compensation circuit and low pass filter. It would not have been obvious to apply a temperature compensation scheme, such as, an AFCI fault detecting scheme to Leppo in view of Pinckaers and in further view of Dunk because Dunk only measures faults of a predetermined magnitude. Arc faults contain a slope and magnitude parameter where both parameters must be measured for detection. Therefore, Dunk would not be technically capable of measuring or detecting arc faults and therefore would not be used in a residential environment like Applicant. Similarly, Dunk uses a remote positioned indicator and Applicant does not.

Therefore, it is clear that Applicant's circuit design would not in any way enhance the arrangement of Leppo in view of Pinckaers in further view of Dunk. Without providing any benefit, a proposed modification lacks the necessary legal motivation to establish a *prima facie* case of obviousness under 35 U.S.C. §103. Therefore, the rejection should be withdrawn.

For at least any of the above reasons, it is respectfully submitted that Leppo in view of Pinckaers in further view of Dunk fails to teach Applicants' independent claims 16 & 23 and that the rejections under 35 U.S.C. § 103(a) should be withdrawn. Moreover, claims 18-22 and 25-29 depend, either directly or indirectly, from claims 16 & 23 and therefore recite the same

allowable combinations of features, as well as reciting additional features that further distinguish over Leppo in view of Pinckaers in further view of Dunk.

Claims 17 & 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Leppo in view of Pinckaers and Dunk et al. as applied to claims 16 and 23 above, and further in view of Chu et al.

Applicant respectfully submits that Claims 17 & 24 were rejected and are not unpatentable over Leppo in view of Pinckaers and Dunk et al. as applied to claims 16 and 23 above, and further in view of Chu et al.

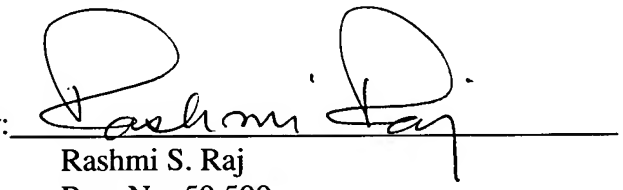
Applicant believes that for at least any of the reasons stated in this response and without being repetitive, it is clear that Applicant's circuit design would not in any way enhance the arrangement of Leppo in view of Pinckaers and Dunk et al. as applied to claims 16 and 23 above, and further in view of Chu because Chu requires and analog to digital data conversion as an improvement over Applicant's pure analog data measurement. Without providing any benefit, a proposed modification lacks the necessary legal motivation to establish a *prima facie* case of obviousness under 35 U.S.C. §103. The rejection should be withdrawn.

Applicant respectfully submits that this case is in condition for allowance. If the Examiner believes that a telephone conference will facilitate moving this case forward to being issued, Applicant's representative will be happy to discuss any issues regarding this application and can be contacted at the telephone number indicated below.

To the extent necessary, Applicant petitions for an extension of time under 37 C.F.R. 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including any missing or insufficient fees under 37 C.F.R. 1.17(a), to Deposit Account No. 19-2179, under Order No. 2003P08454US, and please credit any excess fees to such deposit account.

Respectfully submitted,

Dated: February 3, 2006

By: 

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